

# United States Patent [19]

Timm

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[54] **APPARATUS FOR PREPARING LARGE QUANTITIES OF UNIFORM SIZE DROPS**

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[\*] Notice: The portion of the term of this patent subsequent to Apr. 24, 2001 has been disclaimed.

[21] Appl. No.: **732,980**

[22] Filed: **May 13, 1985**

**Related U.S. Application Data**

[63] Continuation-in-part of Ser. No. 607,535, May 7, 1984, abandoned, which is a continuation-in-part of Ser. No. 588,588, Mar. 12, 1984, abandoned, which is a continuation-in-part of Ser. No. 398,007, Jul. 14, 1982, Pat. No. 4,444,961, which is a continuation-in-part of Ser. No. 283,779, Jul. 16, 1981, abandoned, which is a continuation-in-part of Ser. No. 202,265, Oct. 30, 1980, abandoned.

[51] Int. Cl.<sup>4</sup> ..... **C08F 2/00**

[52] U.S. Cl. .... **422/135; 422/134; 526/88**

[58] Field of Search ..... **526/88; 422/134, 135**

[56] **References Cited**

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[57] **ABSTRACT**

Spheroidal polymer beads having a uniform size are prepared by polymerizing uniformly sized monomer droplets formed by the vibratory excitation of a laminar flow jet of monomeric material flowing in a continuous liquid medium containing a suitable suspending agent. In the apparatus employed, the means for vibratorily exciting the laminar flow jet is parallel to the axis of the monomer jet. For example, the laminar flow jet of a monomer mixture and a polymerization initiator can be subjected to vibratory excitation and the resulting monomer droplets are polymerized to yield copolymer beads. The apparatus employed allows for the preparation of large numbers of monomer droplets.

**11 Claims, 4 Drawing Figures**